CLAIMS

What is claimed is:

1. In a decoder having one or more branch metric units for calculating branch metric values, a method for performing normalization comprising:

if a specified normalization condition is met, adding a normalization amount to a branch metric value at each of said branch metric units to produce a normalized branch metric value.

2. The method as in claim 1 wherein said specified normalization condition is that a plurality of state metrics are above a threshold value.

3. The method as in claim 1 further comprising adding said normalized branch metric value to a plurality of stored state metric values.

4. The method as in claim 3 wherein said state metric values are stored in a plurality of accumulators.

5. The method as in claim 1 wherein said branch metric calculations are Viterbi branch metric calculations.

6. The method as in claim 3 further comprising:

if a second specified normalization condition is met, adding a second normalization amount to branch metric calculations performed by each said one or more branch metric units to produced a second normalized branch metric value.

7. The method as in claim 6 wherein said second specified normalization condition is that a plurality of state metrics are above a second threshold value.

8. A method comprising:

monitoring a plurality of state metric values; and

subtracting a normalization amount from each of said state metric values when each of said state metric values are above a first specified threshold.

9. The method as in claim 8 wherein subtracting comprises:

subtracting said normalization amount from branch metric values calculated by one or more branch metric units to produce normalized branch metric values, said normalized branch metric values combined with said state metric values.

10. The method as in claim 8 further comprising:

subtracting a second normalization amount from each of said state metric values when each of said state metric values are above a second specified threshold.

11. The method as in claim 8 wherein said state metric values are stored in a plurality of accumulators.

12. The method as in claim 8 wherein said state metric values are Viterbi state metric values.

13. An apparatus comprising:

normalization logic to generate a normalization signal responsive to a specified normalization condition; and

a branch metric unit to subtract a normalization amount from a branch metric value responsive to said normalization signal.

14. The apparatus as in claim 13 wherein said specified normalization condition is that a plurality of state metric values are above a threshold value.

15. The apparatus as in claim 13 further comprising:

an adder to add said normalized branch metric value to a plurality of stored state metric values.

16. The apparatus as in claim 15 further comprising:

a plurality of accumulators for storing said state metric values.

17. The apparatus as in claim 13 wherein said branch metric value is a Viterbi branch metric value.

18. The apparatus as in claim 13 wherein said normalization logic generates a second normalization signal responsive to a second specified normalization condition, and wherein said branch metric unit subtracts a second normalization amount from said branch metric value responsive to said second normalization signal.

19. The apparatus as in claim 18 wherein said second specified normalization condition is that a plurality of state metric values are above a second threshold value.

20. A machine-readable medium having code stored thereon which defines an integrated circuit (IC), said IC comprising:

normalization logic to generate a normalization signal responsive to a specified normalization condition; and

a branch metric unit to subtract a normalization amount from a branch metric value responsive to said normalization signal.

21. The machine-readable medium as in claim 20 wherein said specified normalization condition is that a plurality of state metric values are above a threshold value.

22. The machine-readable medium as in claim 20 wherein said IC further comprises:

an adder to add said normalized branch metric value to a plurality of stored state metric values.

23. The machine-readable medium as in claim 22 wherein said IC further comprises:

a plurality of accumulators for storing said state metric values.

24. The machine-readable medium as in claim 20 wherein said branch metric value is a Viterbi branch metric value.

25. The machine-readable medium as in claim 20 wherein said normalization logic generates a second normalization signal responsive to a second specified normalization condition, and wherein said branch metric unit subtracts a second normalization amount from said branch metric value responsive to said second normalization signal.

26. The machine-readable medium as in claim 18 wherein said second specified normalization condition is that a plurality of state metric values are above a second threshold value.